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Why are Educated Women Less Likely to be Employed in India? Testing Competing Hypotheses

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Why are Educated Women Less Likely to be Employed in India?

Testing Competing Hypotheses

By

Maitreyi Bordia Das and Sonalde Desai

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Abstract

In this paper we use the Indian National Sample Survey data for 1993-94 to examine the relationship between women's education and labor force participation. While it has been recognized in the literature that education is associated with lower labor force participation for women in South Asia, the reasons behind this association are less well understood. Two competing theories potentially explain this phenomenon – one based on cultural factors and the other on labor market options. Cultural arguments suggest that women's withdrawal from labor force is associated with improvement in the social status of the family. Higher status families choose to educate their daughters, but at the same time, restrict their independence through labor force withdrawal. In contrast, structural arguments suggest that educated women – like educated men – prefer white collar jobs. Since formal sector jobs only comprise 7 percent of all jobs, opportunities for these desirable jobs is limited, resulting in labor force withdrawal of women. We propose empirical tests to examine whether job availability or patriarchal controls play an important role in shaping this relationship. Our results suggest that cultural factors appear to be less important than lack of employment opportunities.

Why are Educated Women Less Likely to be Employed in India? Testing Competing Hypotheses

Maitreyi Bordia Das[1] and Sonalde Desai[2]

The literature on human capital posits that women's labor force participation increases with education. Globally, and in most individual countries, both female education and female employment have increased over the last several decades, leading Schultz (1994) to conclude that the "coincidence of these trends in female participation in the labor force and their schooling support the conjecture that women realize more returns to their schooling through their work in the market labor force" (Schultz, 1994:49). Results from the United States and many other industrial societies support this. Studies in 1960s when female employment began to rise in the United States as well as more recent studies show that women with higher education are more likely to be employed than women with lower education (Bowen and Finnegan, 1960; Cain, 1966; Tienda, Donato and Cordero Guzman, 1992). This relationship is even stronger when husband's income is controlled for (Desai and Waite, 1991).

Although the strength of the relationship between education and employment varies across countries, approaching insignificance in some cases (e.g. Brazil (Lam and Dureya, 1999), South Asia is unique in recording a strong negative relationship between women's education and labor force participation. Poor and uneducated women in South Asia have always been active in the labor force, but among educated women, the labor force participation rates are relatively low. In India, at the aggregate level between 1980-95, secondary school education for women has almost doubled, but labor force participation has remained static and even declined (Figure 1). In fact, several studies suggest that ceteris paribus, labor force participation of women declines with education (Kingdon and Unni,

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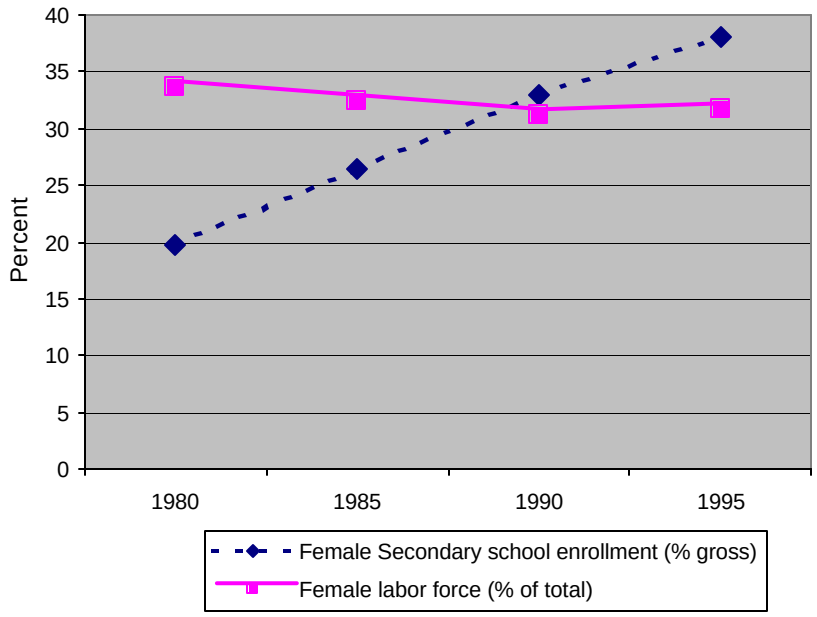
1997; Fafchamps and Quisumbing, 1999). This paper attempts to understand the reasons underlying this decline for individual women.

Figure 1: Changes in Secondary Education and Labor Force Participation for Women in India 1985-95
Source: SIMA, 2002



Theoretical Framework

Human capital theories underscore the importance of education in employment outcomes. In particular, there is increasing emphasis in international development institutions on female education as a key intervening variable for the achievement of a number of development goals. (Schultz, 1994). Higher returns to education for women are also borne out in a number of studies including Psacharopoulos' (1994) cross-country review. Empirical studies from such diverse settings as Taiwan (Gindling et al, 1994), Czech Republic and Slovakia (Chase, 1997) and India (Malathy and Duraisamy, 1993; Duraisamy, 2000) have shown higher returns to education for women than for men. Such studies and the human capital theories on which they are based have become the foundation for the emphasis of international institutions on greater investments in girls' education.

> "Education is essential for raising individual productivity and hence wages. General education gives children skills that will be transferable from job to job and the basic tools necessary for further learning. It augments workers ability to perform standard tasks, to process and use information, and to adopt new technologies and production practices." (World Bank, 1995a, P.4)

Economic theories imply that higher levels of human capital would lead to higher wages, beyond the threshold of reservation wages, drawing women into the labor force. Given this assumption, literature on women's labor force participation has tended to overlook empirical studies from South Asia (Kingdon and Unni, 1997; Sathar and Desai, 2000; Dreze and Gazdar, 1996) which document a negative relationship between women's education and labor force participation. Even within South Asia, the reasons underlying this negative relationship have not been well understood.

A comprehensive analysis undertaken by the National Commission on Self Employed Women and Women in Informal Sector (GOI, 1988) documents that there are few jobs for women in regular salaried or formal jobs – either as office workers or as factory workers - resulting in women's concentration in the informal sector. Since educated men and women often do not want to work in menial jobs as casual laborers or on family farms, many are

unable to find acceptable jobs, resulting in their withdrawal from the labor force. Several studies on India have argued that low returns to education for women, discourage families from educating their daughters (Kingdon and Unni, 1997; Dreze and Gazdar, 1996). For instance, Kingdon and Unni (1997) also show that for Indian women, only education beyond level junior/middle level enhances wage work participation[3].

A second line of thought suggests that women's employment in India, as elsewhere, is determined to a large extent by cultural norms that govern women's mobility and market work. These norms operate at multiple levels and often mirror the status of women in a particular region, caste, or religion, permeating the household as well as the public sphere (Kemp, 1986, Kapadia, 1995; Desai and Jain, 1994). Thus, the gender stratification system at the macro-level determines women's lower opportunities in the formal labor market, while restrictions within the home affect the kinds of work that women can do. These constraints often push women into non-wage (such as self-employed) and unpaid work, or out of the labor force (Raju and Bagchi, 1993; Ghosh, 1995; Sethuraman, 1998; Elson, 1999).

> "Given the preoccupation with status-appropriate work for women, villagers themselves often rank castes by whether they allow women to work:
>
> only within their courtyards/homesteads
> only at their own farms
> only within the courtyards/homesteads of others
> only at the farms of others
> in other activities within the village
> in other activities outside the village.
>
> Under this ranking scale, the more secluded the woman the higher her household's status or prestige," (Chen, 1995, P.46).

These restrictions on women's physical mobility and their attendant withdrawal from the labor force originate from the social construction of gender and work in South Asia and the Middle East. While it has long been recognized that high status families encourage

[3] Kingdon and Unni (1997) predict the wages of women in wage employment and thus, do not include self-

female seclusion whereas poor women have no choice but to work (Youssuf, 1974), some studies have gone a step further and argued that women's withdrawal from the labor force is not just a sign of a family's high status, but that this action in itself contributes to increased status (Papanek, 1988; Standing, 1991)[4].

However, education is related to employment through both income and substitution effects. Educated women marry educated men, who have higher incomes. Since high income families have a lesser need of women's contribution to the household, this encourages the labor force withdrawal of women. On the other hand, educated women also have higher incomes than less educated women, which ought to encourage their labor force participation. Studies show that while higher income families may be less likely to need women's income; when employed, educated women have higher incomes, and it has been observed in other societies that in the absence of patriarchal controls, this income effect should dominate the substitution effect (Brinton, Lee and Parish, 1995).

Thus, the literature attributes women's declining labor force participation with education to two factors: (1) Structural effect due to lack of opportunities for educated women; and, (2) cultural effects whereby high socioeconomic status simultaneously encourages higher education and labor force withdrawal. While several scholars have attempted to address these two points of view in ethnographic work (Sharma, 1980; Standing, 1991), few studies have actually been able to disentangle these causal mechanisms. In this paper, we propose two separate ways of testing these competing theories.

First, we test the structural argument by directly examining the effect of opportunity structure on women's labor force participation. This test relies on the argument that while women's own education may be a function of familial socioeconomic status, the educational level of the village or residential block is independent of the class location of the index family. The educational level of the village or residential block can be expected to affect women's employment, independent of family preferences, in a way that allows us to test the opportunity structure/competition hypothesis.

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employment as a category.

[4] Standing (1991) documents the effect that the ideological re-structuring of the domestic domain had at the turn of the 20th century on women's work participation in Bengal, whereby women from upper class families

One direct effect of this cluster level education is to increase the pool of educated workers looking for jobs in the formal sector. Among the uneducated workers, only 4 percent are in the formal sector jobs and nearly 48 percent are casual daily wage workers. In contrast, among the employed individuals with at least secondary education, 38 percent are in the formal sector and only 12 percent are casual wage workers (Das, 2002). Thus, there is an overwhelming preference for formal sector jobs among educated individuals in India. However, the number of formal sector jobs is extremely small and these account for about 7 percent of all jobs with about 70 percent of these being provided by the government in hospitals, schools, public works and public administration. Since the growth of these jobs depends upon services needed by a population rather than the education level of the population, these jobs do not increase commensurately with the increase in the education at the village level. Hence, increasing education leads to increased competition for scarce jobs. Thus, by controlling for cluster level education, we are able to examine the direct effect of opportunity structure and competition on women's employment.

Second, we use caste as a proxy for cultural values. We examine the importance of cultural factors on women's labor force participation directly by interacting education with caste. Apart from gender and social class, caste is the other major axis of inequality and disadvantage in India. Paradoxically, due to historical reasons, while lower castes are generally disadvantaged in the social structure, restrictions on lower caste *women* are less marked than those on upper caste women (Beteille, 1991; Agarwal, 1994). Among upper castes, keeping women within the confines of the home is a matter of family honor. Pioneering research by M.N. Srinivas (1966) provides an interesting explanation. Upper castes have adopted a Brahminical style of life in which ritual purity, absence of widow remarriage and women's seclusion play an important role in asserting their high status. Mid and lower level castes often emulate these norms in a process known as "sanskritization" in order to upgrade their social status.

However, the lowest castes, often known as the Scheduled Castes (due to their listing in a schedule appended to the Constitution), have no possibility of escaping their low social

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managed to become visible in the public domain, but the "petty bourgeoisie" kept their women securely tied to the home.

status and consequently see little reason to encourage loss of income associated with women's withdrawal from the labor force. The Scheduled Castes comprise about 18 percent of the population. In addition to upper and lower castes, approximately 8 percent of the Indian population is "tribal". Scheduled Tribes, (enumerated in another schedule of the Constitution), fall outside the ritual pale of the Hindu caste system. Its members, like the Scheduled Castes, are among the poorest in the society (Govt. of India, 2001) but tribal laws and customs have always given great importance to women and gender inequality in tribal families is considered to be far lower than in upper caste families (Beteille, 1991; Maharatna, 2000).

Caste and class are correlated, but this correlation is far from perfect. For example, the proportion of upper castes below the national poverty line was 36 percent in 1993-94, while for the Scheduled Castes this proportion was over 48 percent and for Scheduled Tribes it was over 51 percent. Similarly, the average female literacy rate in India according to the 1991 census was 50 percent, but only 23.8 percent of Scheduled Caste women and 18 percent of Scheduled Tribe women were literate (Govt. of India, 2001). Thus, while Schedule Caste and Tribe families are poor, so are many upper caste households.

For Scheduled Castes and Tribes, apart from gender and caste based dynamics, another factor has a strong bearing on labor market options. On the whole, Scheduled Castes and Tribes are discriminated against in the labor market. However, in an attempt at creating positive discrimination, the Constitution of India guarantees reserved quotas in legislatures, government jobs, government funded educational institutions and public sector companies to Scheduled Castes and Tribes. At each level of recruitment, 15 percent of the jobs are reserved for Scheduled Castes and 7.5 percent for Scheduled Tribes.

Thus, Scheduled Castes and Tribes have a captive pool of regular salaried jobs[5]. This is particularly relevant in a labor market where the major part of formal jobs are in the public sector. However, this does not necessarily mean that Scheduled Caste and Tribe individuals are able to get these jobs. Many positions remain vacant with the management claiming lack of suitable candidates. There are no special quotas for females from Scheduled

[5] This is true at least in public employment, which in nay case is the major form of regular slaraied employment.

Castes and Tribes[6] and it is quite likely that males from among Scheduled Castes and Tribes may capture these jobs. Moreover, such regular salaried jobs employ less than one-tenth of the employed persons. Nonetheless, educated Scheduled Castes and Tribe candidates for government jobs do have reserved seats and do not have to compete in the general pool. Consequently, in addition to lower gender inequality, job reservation may be another factor pulling Scheduled Castes and Tribe women into the labor force. Thus, if education has any positive effect on labor force participation, we would expect to see it first among Scheduled Caste and Tribe women.

In our framework we have created a stylized dichotomy of cultural versus structural factors. In fact, the two may be linked and reinforce each other. However, since the literature focuses on cultural to the exclusion of structural factors in women's labor market outcomes, our paper proposes a way of dealing with both issues. Therefore, we start from the fact that gender inequality is higher among upper castes than among lowest castes and restrictions on women's mobility and associated withdrawal from the labor force are far more prized in the former (Agarwal, 1994; Murthi et al, 1996). This would imply that:

1. If women's withdrawal from the labor force with high education is due to the fact highly educated women come from the upper strata and are less likely to be in the labor force due to status reasons, then one would expect this effect to operate mainly in upper caste families. For the Scheduled Caste and Tribe families this would not be a relevant issue. Thus, we would expect education to decrease employment in upper caste families but increase employment in the Scheduled Caste and Tribe families.

2. If on the other hand, women's withdrawal from the labor force is due to lack of appropriate jobs, then both upper and lower caste women as well as tribal and non-tribal women would show declining labor force participation with education.

Data and Methods

We use data from the Indian National Sample Survey 50th round (1993-94) to test these arguments. Schedule 10 of the survey on Employment and Unemployment has detailed

[6] There are special targets in large scale employment generation and asset creation programs that the administration has to abide by and include at lease 30 percent women as program beneficiaries. These programs are typically for persons below the poverty line and the employment is generally as casual labor.

data on employment. The National Sample Survey Organization (NSSO) of India conducts quinquennial surveys on consumption expenditure and employment. These surveys are considered to be one of the most reliable data sources for India. The 50th Round surveyed 115,354 households located in 6,951 villages and 4,650 urban blocks. In all, it has data on 356,289 persons in rural and 208,248 persons in urban areas, providing a large national sample size. The NSS data are highly regarded and widely used for planning purposes in India. We restrict the analytic sample to women in the age group 20-55 – prime working years in regular salaried employment. In so doing, we are left with a sample size of 130,361 women. All analysis is weighted to make it nationally representative using Intercooled STATA 7.0.

Exact definitions of variables used in this analysis are provided in Table 1, descriptive statistics are presented in Tables 2 through 4 and logistic regression results are presented in Table 5. We estimate three logistic regression models predicting the probability of being employed[7]. The first model estimates the probability of being employed while controlling for education and a number of other individual and household characteristics. The second adds opportunity structure and competition in the form of mean primary education and mean post-primary education in the village or urban sampling block to the model. The third model then adds interaction terms between Scheduled Caste and Tribe with education.

Dependent Variable

Our dependent variable, employment status, is a dummy variable, 1 if employed and 0 otherwise. It is important to note that the data on women's labor force participation in developing countries have been highly criticized as resulting in serious omission of women's work due to undercount (Beneria, 1982; Jain and Banerjee, 1985). Much of this criticism has come from Indian feminists who have worked extensively with the National Sample Survey Organisation to develop more nuanced measures of women's work including questions on non-remunerative activities that are often encompassed under domestic chores such as farm work and looking after cattle. Consequently, women's labor force participation as measured

[7] Based on principal usual status activity where women reported their activity in the greater part of the 365 days preceding the survey.

by National Sample Survey is about five percentage points higher than as measured by the Census for both urban and rural India (Desai, 1999).

Independent Variables

Our independent variables of interest are *education* (coded as two dummies indicating primary education and post-primary education, with uneducated as the omitted category) and *caste* (coded as two dummies for Scheduled Caste and Scheduled Tribe, with upper caste as the omitted category). We also include a number of important control variables indicating residence and demographic characteristics of the individual and the household (See Table 2 and 3). In addition, we capture the effect of opportunity structure through mean primary and post-primary education in the village or urban block. This is calculated by counting the number of individuals aged 20 to 55 with primary and post primary education in the sample who reside in the same village or urban block (excluding the respondent) and dividing this by the village specific sample size. For most villages, this implies a sample size of 20-26 per village/block.

In addition to education and caste, we control for a number of background factors known to be related to employment. These include age, a squared term for age, religion, marital status, presence of children under 5 in the household, household size, urban residence, and region of residence.

Results

The results of the logistic regression predicting labor force participation in Model 1 indicate that primary and post-primary education each significantly reduces the likelihood of being employed for women. Moreover, Scheduled Caste and Tribe women, women living in rural areas, older women, unmarried women, those without a child in the household under the age of five, and those living in small and nuclear families are more likely to be employed. In addition, women who live in southern and western states are at a large advantage and those in the northern states are at a slight advantage (compared to Bihar, Uttar Pradesh and Madhya Pradesh, the omitted category) for labor force participation. The picture that emerges so far, is consistent with the literature.

Model 2 adds the effect of mean primary and post-primary education in the village or urban block to the model. This is intended to capture the level of competition in the area. There is a large negative effect of mean primary (coefficient of -0.79) and an even larger one of post-primary education (coefficient of -1.58) on women's labor force participation. These large and significant negative effects have interesting implications for the research on the relationship between education and women's employment. In as much as higher regional education captures the economic development of the region, which implies higher employment opportunities, this should increase the labor force participation. However, while some positive effect is probably present, it is by far superceded by the increase in competition due to a higher pool of educated individuals. In other words, while we would have expected areas with higher levels of education in the aggregate to be more developed and have a higher demand for labor, the likelihood that emerges from these results is that the supply of educated labor far exceeds the demand. In results not presented here, similar analyses were undertaken for males with similar results. For males, the negative coefficient of cluster level primary education is -0.21 (significant at 0.05 level) and that for post-primary education is -1.1 (significant at 0.001 level).

The addition to cluster level education variables fails to fully account for all of the individual level education effect, although it reduces the size of these coefficients to some extent. Moreover, in as much as education level of the community is associated with other factors such as presence of young children and residence in southern and western part of the country, controlling for the community level education accentuates the effect of these variables to a modest degree.

In Model 3, we interact education with Scheduled Castes and Tribes. In our conceptual framework we had argued that if the negative effect of education on women's employment was driven by cultural factors, it would be largely limited to the upper caste women. Under these conditions, we would expect the interaction terms for education variables and scheduled caste/tribe to be positive and large enough in magnitude to compensate for the negative main effect of education. Primary education reduces the likelihood of being employed for all women with a coefficient of -0.46. However, for Scheduled Caste women, this effect is offset by a positive interaction term (SC*Primed),

which suggests that for Scheduled Caste women, the negative effect of primary education on employment is lower than for other women but not absent by any means. With post-primary education, the interaction term (SC*Postpri) is negative and significant, suggesting that post-primary education disadvantages Scheduled Caste women even more than it does upper caste women. Interaction terms for Scheduled Tribe and education present a similar picture.

While this paper has focused only on women, it is important to note that the lack of labor market opportunities also affects male labor participation, albeit this effect is largely limited to young men. Table 6 documents the decline in labor force participation for men with education. The results show that for men aged 20 to 30, labor force participation declines as education increases with the greatest effect noted for men with post-primary education. These men probably represent the often remarked upon group of educated unemployed men who are waiting to find a suitable white collar job and filling out job applications. A wait of 2-3 years to find a suitable government position is fairly common. After 30, however, men either find what they are looking for or give up waiting for a formal sector job and accept whatever job is available. In contrast, the negative relationship between education and women's labor force participation persists at all ages. Education for women in India is far rarer than that for men; thus, educated women are likely to come from higher socioeconomic strata than educated men and to marry higher income husbands. Hence, educated women have greater family resources allowing them to stay out of the labor force if a desirable job is not available, an option rarely available to men.

Discussion

Research presented above indicates that education leads to lower employment for women in India, whether for upper caste or for Scheduled Caste and Scheduled Tribe women. We have tested two potential explanations: (1) A structural explanation which suggests that lack of suitable employment opportunities results in labor force withdrawal of educated women; and, (2) A cultural explanation which suggests that the relationship between education and employment for women is spurious with higher socioeconomic status families encouraging both education and labor force withdrawal. Our results support the structural explanation.

We argue that first that lack of suitable employment reduces the labor force options of educated individuals seeking jobs in the formal sector. In another analysis we found that the occupational structure for men and women had remained largely unaltered between the decade of the mid 1980s to the mid 1990s in India (Desai and Das, 2002). Second, gender inequality at a macro level further reduces women's employment options. Favored formal sector jobs are dominated by men; only 15 percent of the formal sector jobs are filled by women. In absence of formal sector jobs, the only options available to educated women is to work on family farms, as vegetable vendors, domestic servants or daily laborers. Since educated women are usually married to educated men and are likely to have some financial resources, instead of accepting poorly paid jobs as casual wage workers, these women choose to remain out of the labor force.

We have tested the structural explanation directly by examining the impact of cluster level education (exogenous to individual education/employment relationship) on women's labor force participation. The results suggest that women who live in areas with higher levels of education face increased competition in the labor market since there are more educated individuals competing for a small pool of formal sector jobs. While it is possible that to some extent the regional education level is confounded with regional development, an examination of state level differences in education in India does not support this possibility. Literacy and poverty appear to be only loosely connected in India. Among states with very high levels of literacy, some have high levels of poverty (e.g. Maharashtra) and others have low levels of poverty (e.g. Kerala); while among states with low levels of literacy, some have a high incidence of poverty (e.g. Bihar and Madhya Pradesh) and others have a lower incidence of poverty (e.g. Rajasthan). Even if they were connected, one would expect that areas with high levels of education would have a better economy and hence more job opportunities. Under these circumstances, we would not expect cluster level education to be negatively related to employment of both men and women.

While these results provide a test of the impact of lack of jobs and higher competition of women's labor force participation, interactions with caste and tribal status provide a test of the impact of cultural factors. Here we had hypothesized that in as much as the negative effect of women's labor force participation is associated with educated women coming from

higher social classes with greater preference for women's seclusion and withdrawal from the labor force, we would expect to see these effects mostly limited to upper caste women. Scheduled Castes and Tribes have never placed the same premium on women's seclusion as upper caste families. Since women from Scheduled Castes and Tribes are less likely to be subject to patriarchal controls and receive some benefits from positive discrimination, we expected that if cultural arguments are important, the negative impact of education on women's employment should be largely limited to the upper caste households.

Our results suggest that both upper caste as well as Scheduled Caste and Tribe women are less likely to be employed if they are educated. The negative impact of primary education on labor force participation, is moderated for Scheduled Caste and Tribe women due to a small but positive interaction term. However, for women with post-primary education, there is little difference in the decline in labor force participation between upper caste women and Scheduled Caste and Tribe women; in fact, Scheduled Caste and Tribe women are even more likely to drop out of the labor force than upper caste women.

This observation provides prima facie evidence that cultural factors play a less important role in women's labor force withdrawal than structural factors. It is however, important to note a caveat. It may well be that as Schedule Caste/Tribe families become affluent, they start behaving like upper caste families and increase the patriarchal controls on women. This, rather than an absence of cultural forces, may account for our results. We have no way of ruling out this possibility totally. However, even if some convergence between Scheduled Caste/Tribes and upper caste families is likely, there is no reason to expect that Schedule Caste/Tribe would begin to employ *greater* patriarchal controls on women than their upper caste counterparts, resulting in greater labor force withdrawal for Schedule Caste/Tribe women with secondary education.

Another reason for our results could be that cultural and structural factors reinforce each other. It may thus be likely that the labor market has internalized and accepted the notion that women are less likely to wok. Asymmetrical information available to men and women regarding job vacancies, mechanisms to apply and attend interviews may hinder women's entry into employment as well.

To what extent could the classic U-curve hypothesis explain our results?

> "The labor force participation of women often changes in significant ways as development proceeds. Female participation rates tend to be higher when an economy is organized around family-based production in agriculture. With economic growth and increased urbanization, participation often declines, as women stay at home and men go out to work. At still higher levels of income per capita, female participation increases again as labor market options for women increase. Patterns of labor force participation also reflect cultural and ideological differences."
>
> World Bank, World Development Report, 1995:25.

In the case of India, unlike South East Asian countries, there has been no "feminization" of the work force with increasing levels of GDP growth. In fact, Indian women have been "at the bottom of the U" in terms of labor force participation, for several decades, in spite of steady growth in the GDP[8]. This brings us to the type of growth that has occurred in India, which has not been accompanied with large scale employment opportunities leading to concern over "job-less growth" (Ghosh 1998; 2001). This has assumed particular importance in the context of liberalization policies, and shrinking jobs in the public sector.

Implications for Policy

Human capital approaches to development have tended to see education, employment and economic growth as being intertwined with increased education driving economic growth and leading to better employment opportunities. Our results suggest that the link between the two may not be as close a previously assumed, at least in the short run. Investments in education have many social benefits ranging from decline in fertility (Axinn and Barber, 2001) to marital power (Oropesa, 1997). However, their labor market returns are far from certain.

The identification of the causes underlying the negative relationship between education and labor force participation in South Asia has important policy implications. If cultural predisposition causes this negative relationship, then one can expect that school

[8] The GDP growth rate in India has improved from an average of about 5.7 percent per annum in the 1980s to about 6.5 percent in the 1990s (Govt of India, 2001).

enrollment for girls will keep increasing in the foreseeable future because parents are able to maintain the gender system even as education attainment increases. In fact, parents, husbands and parents-in-law of educated women are even more successful in maintaining patriarchal controls than the relatives of uneducated women. In contrast, if labor market opportunity structures determine the relationship between education and labor force participation then we might expect a backlash reducing the growth in girls' education. If parents respond to earning potential (Foster and Rosenzweig, 1996) and this potential is limited for educated women, then parental incentives to invest in girls' schooling may also be limited. When there is sufficient income and school fees are low, parents may send girls to school. But in economic adversity or when school fees increase during structural adjustment, girls school enrollment may suffer. This leads us to echo an observation by Buchmann (2000) in the Kenyan context, suggesting the importance of public policies that redress the mismatch between educational outcomes and employment opportunities.

While the realization that education is not a simple panacea for employment problems is becoming better understood than it was (GOI, 2001), yet the rhetoric on simply raising education status continues to dominate the policy literature. The policy implications of our findings center on two important issues – quality of education and quality of employment. The capability approach put forward by Sen (1999) captures the role of human capital as a necessary but not sufficient condition for enhancing the *capabilities* of human beings. He makes two important points – one, that education and "human capital" are necessary for growth and income, but that they are not sufficient to enjoy the fruits of that growth or income. Second, education does not merely fulfill the function of enhancing growth – nor should this be its only *raison d etre*. It strengthens the capability of individuals to lead the kind of life they desire.

Education has to be accompanied by substantial growth if it is to have an impact on employment. In India, with the progress of economic reforms initiated in the 1980s, public sector jobs will continue to decline. Thus, economic growth will need to be accompanied by alternate secure jobs and some means to ensure that social inequality is recognized in the recruitment to these jobs. This means growth in private jobs with provisions of job security, social security, and benefits. In addition, changes in women's access to information through

institutional mechanisms, provision of childcare and other legal changes that facilitate their access to employment must accompany an increase in jobs.

Table 1: Independent Variables and their Description

Variable	Survey Codes	Coding
Age*	In years	i. In years ii. Age Squared as a continuous variable
Marital Status	Never Married Currently Married Widowed Divorced/Separated	Married =1 if currently married Any other =0
Religion	Hinduism Islam Christianity Sikhism Jainism Buddhism Zoroastrianism Other	Muslim=1 Other religion =1 Reference: Hindu
Caste	SC – Scheduled Caste ST – Scheduled Tribe General - Non-SC/ST	Scheduled Caste (SC)=1 Scheduled Tribe (ST)=1 Reference: Non-SC or ST
Education	No education Literate through attending non-formal classes Literate below primary Primary Middle Secondary Higher Secondary Graduate in various disciplines	Literate through primary =1 Post-primary (middle school and above)=1 Reference: Uneducated
Region	States	North =1 if Himachal Pradesh, Punjab, Haryana, Rajasthan, Chandigarh, Delhi **East** =1 if West Bengal, Orissa, Andaman and Nicobar Islands **West** =1 if Gujarat, Maharashtra, Goa, Dadra and Nagar Haveli, Daman and Diu **South** =1 if Tamil Nadu, Karnataka, Kerala, Andhra Pradesh, Lakshadweep, Pondicherry **North-East** =1 if Manipur, Tripura, Arunachal Pradesh, Sikkim, Assam, Meghalaya, Mizoram, Nagaland **Central** =1 if Bihar, Uttar Pradesh, Madhya Pradesh (Reference)

Table 1: Independent Variables and their Description (cont'd)

Variable	Survey Codes	Coding
Childcare needs of household	Males under 5 years Females under 5 years	Child5=1 if household has at least one child under five Child5=0 otherwise
Household Size	Number of members	Medium =1 if size = 4-6 Large=1 if size >6 Reference: Small (<4)
Extended Family	Self Spouse Married Child Unmarried child Grandchild Father, mother, father-in-law, mother-in-law Brother, sister, brother-in-law, sister-in-law, other relative Servant, employee other non-relative	Extended family=1 if respondent's relationship to head is married child, unmarried child, grandchild, father, mother, father-in-law, mother-in-law brother, sister, brother-in-law, sister-in-law, other relative. Extended family=0 otherwise
Average Primary Education	Calculated from all individuals (males and females) aged 20-55 in a given village/urban block excluding respondent No. of individuals with Primary(post-primary) education)/No. of individuals in the village included in the sample excluding respondent	**Ranges from 0 to 1**
Average Post-Primary Education		

*Age, age squared, percent of people with primary and secondary education in the cluster are treated as continuous variables in the analysis, the rest are categorical variables.

Table 2: Means of Key Independent Variables In Appendix

Variable	Mean
Employed	0.34
Caste	
Scheduled Caste	0.18
Scheduled Tribe	0.09
Non-Scheduled Caste or Scheduled Tribe	0.73
Religion	
Hindu	0.84
Islam	0.10
Other religions	0.06
Education	
No Education	0.63
Primary Education	0.18
Post Primary Education	0.19
Community Education Level	
Proportion primary education	0.32
Proportion secondary education	0.22
Marital Status	
Married	0.87
Not Married	0.08
Age	34.26
Urban	25.2
Region	
North	0.11
Central	0.32
South	0.26
East	0.13
West	0.15
North-East	0.04
Household Structure	
Presence of a Child under 5	0.48
Medium households (4-6)	0.37
Large households (7+)	0.45
Not household head or spouse of head	0.23

Table 3: Employment Status of Women by Caste

	Scheduled Caste		**Scheduled Tribe**		**Non SC/ST**	
	N	Percent	N	Percent	N	Percent
Employed	9435	40.16	6356	56.18	66842	30.05
Not Empl oyed	14058	59.84	4957	43.82	28714	69.95

Table 4: Employment Status of Women by Education Level

	Uneducated		**Primary Education**		**Post Primary Education**	
	N	Percent	N	Percent	N	Percent
Employed	33699	41.00	6151	26.14	4654	18.89
Not Employed	48496	59.00	17382	73.86	19978	81.11

Table 5: Logistic Regression predicting the probability of being employed for women aged 20-55

	Model 1 Education Effects	Model 2 Opportunity Structure Effects	Model 3 Interaction of Caste with Education
Education Variables			
Primary Education	-0.67***	-0.43***	-0.46***
Secondary Education	-1.03***	-0.59***	-0.58***
Caste/Religion Variables			
Scheduled Caste (SC)	0.27***	0.24***	0.23***
Scheduled Tribe (ST)	0.96***	0.83***	0.82***
Muslim	-0.81***	-0.86***	-0.86***
Other Religion	-0.15***	-0.08***	-0.08***
Demographic Variables			
Age	0.16***	0.17***	0.17***
Age Square	0.00***	0.00***	0.00***
Married	-0.84***	-0.87***	-0.87***
Medium Household	-0.28***	-0.25***	-0.25***
Large Household	-0.33***	-0.32***	-0.32***
Presence of Child under 5	-0.06***	-0.09***	-0.09***
Not Head/Spouse of Head	-0.20***	-0.20***	-0.21***
Residence Variables			
Urban	-0.82***	-0.58***	0.13***
North	0.12***	0.13***	-0.29***
East	-0.37***	-0.29***	1.26***
West	1.14***	1.27***	1.27***
South	1.20***	1.27***	-0.15***
North East	-0.29***	-0.14***	0.13***
Community Education Levels			
Mean Primary Ed.		-0.79***	-0.80***
Mean Secondary Ed.		-1.58***	-1.58***
Interaction of Caste with Education			
SC * Prim. Ed			0.17***
SC * Secondary Ed.			-0.06***
ST * Prim. Ed.			0.18***
ST * Secondary Ed.			-0.14***
Constant	-2.46***	-2.16***	-2.15***

*** p <= 0.001
** p <= 0.01
* p <= 0.05
+ p <=0.1

Reference Categories: Uneducated, upper caste, Hindu, unmarried, central region, nuclear family, small family

Table 6: Percent of Men and Women Employed by Education and Age

	Men		Women	
	Age 20-30	**Age 30-55**	**Age 20-30**	**Age 30-55**
Uneducated	97.1	97.2	37.8	43.2
Primary Education	96.7	97.7	25.5	26.8
Secondary Education	75.7	97.9	16.4	22.3

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